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| 09/705,027 | 11/02/2000 | Hideshi Hattori | TJK/134 | 6830 |

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WILDMAN, HARROLD, ALLEN & DIXON
225 WEST WACKER DRIVE
CHICAGO, IL 60606

EXAMINER

PARKER, FREDERICK JOHN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1762

DATE MAILED: 01/27/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/705,027

Applicant(s)

Examiner

Group Art Unit

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE — 3 — MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 12/30/02

☒ This action is **FINAL**.

- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-23 is/are pending in the application.
Of the above claim(s) 14-20 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-13, 23 is/are rejected.
- ☒ Claim(s) 21, 22 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftperson's Patent Drawing Review, PTO-948
- ☐ Other _____

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Response to Amendment

Election/Restriction

1. Applicants' response of 12/30/02 affirmed the election of claims 1-13 and 21-22, but without pointing out why the restriction was traversed. Accordingly, it will be treated as an election without traverse with Applicants maintaining the right to file a proper divisional.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Adair et al.

Adair et al is cited for the same reasons cited in the previous Office Action. This Examiner has thoroughly reviewed the case file and prior art.

Applicants argue that (1) Adair fails to disclose all the elements of claim 1; (2) the Office equates the negatively charged polymer of Adair to Applicants' "forming a polymer-containing layer"; (3) the Office equates immersion of the coated substrate into the diamond suspension (Applicants' improperly state "solution" which would imply the diamonds are dissolved in the solution which is incorrect, see col. 4, 21) with Applicants' bringing the particle suspension

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dispersed in a solvent capable of swelling the polymer layer. Adair et al does not so eloquently explain the mechanism of adhesion as discussed in the text of Applicants' specification. However Adair et al meets each and every limitation of claim 1 when Applicants claims are read in light of their specification.

Adair forms diamond particles on a polymer-coated substrate, the method comprising the steps of (1) applying to a substrate positively charged cationic polymers, specifically citing on the top of column 4 polyelectrolyte polymers such as polyethyleneimine to the surface of a substrate, and then (2) immersing the coated substrate into an aqueous diamond **suspension** (col. 4, 21-24) which allows adherence of diamond particles to the polymer. Step (1) is clearly the same as Applicants' "forming a polymer containing layer mainly forming (sic) of a polymeric material"; in fact, the polymer of Adair et al is IDENTICAL to that of Applicants as described on page 22, 12-15 of their specification, and further the charge mechanism of Adair et al is recognized by Applicants on page 20. Applicants even state that aqueous suspensions swell such polyelectrolytes on page 8 last paragraph bridging to top of page 9. Clearly the same polyelectrolytes would **inherently swell** in the presence of an aqueous suspension. Step (2) the is the same as Applicants "a step of bringing a particle suspension ...into contact with the polymer-containing layer." Any additional

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steps which may be present in Adair et al are permissible by virtue of Applicants' open-ended transitional term "comprising". Applicants argument that Adair et al calls the polymer layer a mask is moot because they are similar polymer layers with identical functions. Further, there is nothing in Applicants claim to prevent the layer from being a mask. In conclusion, Adair et al provides a polyelectrolyte polymer layer of an identical, inherently swellable, composition to a substrate and contacts it with a suspension of particles to cause adherence of the particles to the layer, the aqueous solvent inherently being capable to swell the polyelectrolyte polymer layer, thereby meeting all the limitations of claim 1. No arguments were set forth regarding the rejection of claims 2-13 and they therefore remain rejected for the same reasons discussed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adair et al.

Adair et al is cited for the same reasons discussed in the previous Office action, and as above. While the degree of swelling is not expressly discussed, since the materials of the polymeric polyelectrolyte layer are the same, and an aqueous suspension is used in both the claims and Adair et al, the time of immersion/ contact would have dictated the degree of inherent swelling, and one of ordinary skill would have determined the optimal time of immersion/ contact by routine experimentation to achieve a desired concentration of particles deposited and degree of adhesion, which are common and ordinary

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process variables which would have been within the purview of one of ordinary skill in the art. It therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Adair et al by adjusting immersion/ contact time for the polyelectrolyte polymer layers and aqueous particle suspensions to optimize the properties of the final particle-coated article.

7. This Examiner withdraws the rejection of claims 1-2,4,10,12-13,21 using the Gould reference.

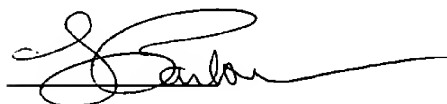
8. Claims 21-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred J. Parker whose telephone number is (703) 308-3474.



Fred J. Parker

**FRED J. PARKER
PRIMARY EXAMINER**

January 23, 2003

10-146625